

**111<sup>th</sup> Annual Meeting  
The Ohio Academy of Science  
Hosted by  
Capital University  
Columbus, Ohio  
April 5-6-7, 2002**

**About the Annual Meeting**

**T**HE OHIO ACADEMY OF SCIENCE'S ANNUAL MEETING is for academic, governmental, and industry scientists and engineers, university and pre-college educators and teachers, and pre-college, undergraduate, and graduate students, and interested lay citizens in the Ohio region. Annually the several hundred scientific presentations are complimented by workshops, symposia, an All-Academy Lecture, and field trips on local geology and plant sciences.

**Welcome!**

Capital University welcomes you to the 111<sup>th</sup> Annual Meeting of The Ohio Academy of Science. We invite you to explore our campus and to share in the excitement and opportunities provided in this program.

**REGISTRATION:** Registration is required for all meeting presenters and attendees. On-site registration will be available at a higher rate. To assure reservations for meals, forms must be received by The Ohio Academy of Science by **March 15, 2002**. Please use Registration Form on the last page. Mail completed form and fee to:

**OAS Annual Meeting Registration**  
The Ohio Academy of Science  
PO Box 12519  
Columbus OH 43212-0519  
FAX 614/488-7629 (for Credit Card or PO only)

Registration by credit card or purchase order only will be accepted by FAX at 614/488-7629. Your registration materials, receipt, and name tag will be ready at the meeting registration desk upon your arrival. For further information, please call 614/488-2228. An Adobe PDF form is available at:

<http://www.ohiosci.org/CapitalRegForm.pdf>

**Friday, April 5:** If you will be attending the Friday evening dinner, your registration materials will be available at the door. Friday evening dinner will be in the Mezzanine, Campus Center.

**Saturday, April 6:** Registration will be held in Lobby of Ruff Memorial Learning Center from 8:00AM-3:00PM. On-site registration is possible by check, VISA, or Mastercard. Cash is discouraged.

**Special Acknowledgments:** The Ohio Academy of Science expresses its appreciation to **METCALF & EDDY** for financial support of the Saturday, April 6 Environmental Sciences Breakfast.

**Local Arrangements:** DR. KERRY CHEESMAN

**PARKING:** Free parking is available in lots located at the corner of Pleasant Ridge and Mound Street on the east side of campus.

**SMOKING POLICY:**

Smoking is not permitted in any building on campus.

**MEALS:**

**Friday, April 5.** Preregistration required by March 15 for The Ohio Academy of Science Annual Meeting Banquet held jointly with The Ohio Biological Survey. **Saturday, April 6--** lunch will be available onsite for \$5 in the Harry C. Moores Campus Center. There is no Saturday evening meal.

**HOUSING:**

Please contact hotels and motels directly. See list on page 4.

**GENERAL SCHEDULE**

**Friday, April 5, 2002**

- 3:00PM **The Ohio Academy of Science  
Board of Trustees Meeting**  
Library-GSA Seminar Room
- 3:00PM **Ohio Biological Survey**  
Executive Committee Meeting  
Kerns Chapel-Stegemoeller Lounge
- 6:00PM **Joint OAS-Ohio Biological Survey  
Reception and Dinner**  
Mezzanine, Campus Center
- 7:30PM **Special Public Address**  
Conservatory, Huntington Room

**DR. KATHRYN D. SULLIVAN**  
COSI PRESIDENT AND CEO

**D**R. KATHRYN D. SULLIVAN joined COSI as President and CEO in April of 1996. During her time at COSI, Dr. Sullivan has led the institution through its biggest time of growth, including a move to the new state of the art facility on the Scioto Riverfront. Under Sullivan's leadership, COSI has deepened its commitment to expanding science and learning opportunities throughout the state of Ohio and beyond.

Before taking on her role at COSI, Dr. Sullivan headed up the National Oceanic and Atmospheric Administration where she held the title Chief Scientist. At NOAA, she oversaw research and technology programs in several areas, including climate and global change, marine biodiversity and satellite instrumentation.

Dr. Sullivan is a former NASA astronaut, serving on three shuttle missions. As a member of the first Space Shuttle astronaut class she spent six years preparing for the mission aboard Challenger in 1984, when she became the first American woman to walk in space. In subsequent missions aboard Discovery and Atlantis, she served as a Spacewalk Specialist for the Hubble Telescope and a Payload Commander for ATLAS-1.

Throughout her life, Dr. Sullivan has spent a great deal of time focused on educating children. She led the design of the original Challenger Center Program model and has served as an advisor for numerous exhibit and multimedia projects for groups including National Geographic, the Smithsonian Institution and WGBH.

Dr. Sullivan has a Bachelor of Science degree in Earth Sciences from the University of California at Santa Cruz and a Ph.D. in Geology from Dalhousie University, Nova Scotia. She has received countless honorary degrees and awards, most recently being her election as a Fellow in the American Association for the Advancement of Science.

## Saturday, April 6, 2002

- 7:30 AM **Special Environmental Sciences Breakfast**  
(by invitation only; must be pre-registered)  
Hosted by METCALF & EDDY  
Mezzanine, Campus Center  
How to Apply to the  
Academy for Ohio Environmental  
Science and Environmental Engineering  
Undergraduate Scholarships. **Special**  
**Guests:** 2001-2002 Academic year Scholar-  
ship Recipients
- 8:00 AM-3:00 PM **General Meeting Registration**  
Lobby of Ruff Memorial Learning Center
- 9:00-11:00 AM **Morning poster and podium presentations**
- 11:15 AM **All Academy Lecture**  
Arena of Capital Center on Pleasant Ridge  
  
*Remember Fantastic Voyage?*  
DR. MAURO FERRARI  
The Ohio State University

**P**ROFESSOR MAURO FERRARI is a founder of the fields of biomedical nano- and micro-technology (bioMEMS), and a pioneer of their applications to medical therapeutics in sectors such as drug delivery, cell transplantation, and tissue engineering. In particular, he is interested in oncology, cardiovascular disease and diabetes. His group was the first to successfully perform the implantation of hybrid chips (biological cells included in immunoprotective silicon microchips) into animal models. Additional interests of his include biosensors and bioseparation, multiscale discrete/continuum mechanics and biomechanics; mechanics of composite materials and structures; Thermoelasticity; Homogenization Theory; Functionally graded materials.

- 12:15 PM **Lunch**  
Lunch will be available onsite for \$5 in the Harry C. Moores Campus Center.
- 1:15 PM **OFFICIAL NOTICE**  
of Annual Business Meeting  
for Academy Members Only  
Learning Center, Room 202
- 1:30-5:00 PM **Afternoon poster and podium presentations**

## Sunday, April 6, 2002 Field Trips

### Environmental Geology of Franklin County

8:00 A M Sunday, April 7, 2002

Organized by Dan Jax, Bexley Middle School and Garry McKenzie, Russell Utgard, Julie Weatherington-Rice, The Ohio State University.

This trip focuses on the geologic resources, geologic hazards, fluvial and glacial landforms, and general geologic controls on land

use in Franklin County. It will begin at 8 AM in the parking lot of the Ohio Department of Natural Resources at Fountain Square (off Morse Road, east of Northland Shopping Center). This first stop (with coffee and donuts) will examine the geologic substrate of Franklin County using the bedrock displays in the prairie area and the Earth Day monument. At 8:30 we will depart for the OSU campus area to inspect fluvial and wetlands sites and to discuss approaches to flood protection along the Olentangy River.

We will then cross the divide to the Scioto River where we will examine the role of geologic resources in change at several sites providing examples of limestone quarry post-extraction land uses. As we proceed down river we will discuss water resources and waste disposal at the Dublin Road Water Plant; the Scioto River Flood Wall at the Franklinton Cemetery; recycling at Inland Products, the Frank Road Wastewater Treatment Facility, the former Franklin County Waste to Energy Facility, the now filled sand & gravel extraction/Lowendick construction and demolition debris landfill next to the current operating tire shredding site; dual resource extraction at the Martin Marietta quarry (original site of the landmark Ohio ground water case, *Cline vs. American Aggregates*); the effects of dewatering from that quarry on the regional ground water/surface water systems and associated NPDES permits for Columbus's two waste water treatment plants; and channelization of a stream at the Ag Roc quarry.

In the Scioto valley south of Columbus, sequential and simultaneous multiple land use is readily understood, particularly at the site of the former Hartman Farms. Once a section of the Ohio-Erie Canal Columbus Connector, here grapes have given way to gravel extraction, groundwater is removed in a major well field beneath forest and field, recharged, in part, by the newly formed extraction ponds. Surrounding the region, old gravel extraction sites have been recycled a third time. Now softball and golf events are hosted on top of solid waste.

Time permitting, we will travel east past the kame/esker complex of St. Joseph Cemetery, the Ohio-Erie Canal locks near Lockbourne, and the Kurtz Brothers composting facility to Pickerington Ponds where we again will discuss land-use controversies.

### Watershed Management Planning For Blacklick Creek

Organized by Harry Kallipolitis, Storm Water Coordinator, and William McCarthy, Manager, Ohio EPA Division of Surface Water, Central District Office.

A field trip on the multiple stressors associated with the urbanization of the Blacklick Creek watershed will be held on April 7, 2002. The field trip will commence promptly at 9 a.m. in the main shelter house of Three Creeks Metro Park, off Bixby Road in the village of Groveport.

Blacklick Creek is tributary to Big Walnut Creek and the Scioto River, and flows through New Albany and Reynoldsburg in eastern Franklin County. Residential and commercial development in this area poses a significant threat to water quality of the stream and the integrity of the riparian habitat. A watershed management plan for the Blacklick Creek basin was recently drafted. Elements of the plan will be showcased, including shareholder involvement, management tools, and other strategies to maintain and improve the quality of Blacklick Creek.

An overview of the watershed management plan and requirements for storm water discharges will be presented at the park. Participants will have a short hike to the confluence of the streams, then proceed to upstream sites for an explanation of the potential impacts associated with development. Stream mitigation

will be evaluated, such as constructed wetlands for storm water treatment and relocation projects using natural channel design principles. "Best management practices" and concepts for "smart growth" to minimize degradation will also be examined.

The field trip will culminate with presentations and a question/answer panel at the Mini Theater of New Albany High School. The panelists will include Ohio Environmental Protection Agency, Ohio Department of Natural Resources, Franklin Soil and Water Conservation District, and Friends of Blacklick Creek in conjunction with Rocky Fork Watershed Protection Task Force.

### Kenyon and Denison Field Trip

The purpose of this trip is to see how biological reserves are integrated into the curriculum and activities of undergraduates of two liberal arts colleges, Denison University and Kenyon College.

The group will depart from Capital University in private cars at 9:00 a.m.. We will drive to Granville, Ohio, and meet at the Denison University Biological Reserve by 9:45 a.m.. The DUBR is located 1/4 mi. north of Granville and the Denison University campus on Ohio Rt. 661 (Mt. Vernon Road). Tom Schultz, Professor of Biology, will lead a tour of the reserve and the Polly Anderson Field Station. Included in the tour will be descriptions of laboratory coursework and faculty/student research that utilize the reserve and field station. In addition, Tom will provide a brief overview of the biodiversity inventory and biomonitoring studies that are being conducted at the reserve.

The second site to be visited is the Brown Family Environmental Center at Kenyon College. The BFEC is located just south of Gambier on Laymon Road (follow Ohio Rt. 229 5 mi. east from Mount Vernon). Ray Heithaus, Professor of Biology, will lead a tour of the site, featuring the State Scenic Kokosing River and an eleven-year-old pine plantation used to experimentally evaluate the responses of tree growth to spacing, fertilization, and herbivory. We also will discuss the role of Kenyon student volunteers, especially as they contribute to the community outreach program for students from local elementary schools.

### About Our Host

WITH A FOUNDATION firmly based in a history and tradition of academic excellence, Capital University's undergraduate and graduate programs are preparing students for lifelong learning in the global environment of the 21<sup>st</sup> century. Founded in 1830 as a Lutheran seminary, and chartered as a university in 1850, Capital continually has been at the forefront of preparing students for lives of service. Undergraduate students of all backgrounds and religions study a curriculum that focuses on a liberal arts tradition, strong major and professional programs, and the development of both a personal and societal ethos.

Capital University enjoys a strong science program and an annual Undergraduate Research Symposium where both science and non-science students can showcase their efforts in a variety of research fields. Faculty/student mentoring in research and studies plays a large role in the Capital experience within the sciences. A new Computational Science program seeks to link biology, chemistry, environmental science, geology, physics, computer science, math, and psychology students through use of exciting new research tools.

DR. KERRY CHEESMAN, Professor of Biochemistry, serves as Chair of Local Arrangements.

### Capital Area Lodging

Listed rates are subject to change. Contact hotel for most recent pricing information.

#### East Columbus Locations

Courtyard by Marriot  
Weekday: \$114, Weekend: \$79  
Specify "Corporate Rate"  
2091 Airport Dr. & Cassady Ave.  
Columbus, OH 43219  
614-475-8530

Extended Stay  
Nightly: \$49, Weekly: \$239 - 310  
2200 Lake Club Drive  
Columbus, OH 43223  
614-759-1451

#### North Columbus Locations

The Trueman Club Hotel  
\$101 - Specify "Preferred Rate"  
I-71 at Exit 117, SR 161 at Busch Blvd.  
900 E. Dublin-Granville Rd.  
Columbus, OH 43229  
614-888-7440, 1-800-843-7663

Best Western  
S. \$57, D. \$61  
Specify "Corporate Rate"  
2100 Brice Road.  
Reynoldsburg, OH 43068  
614-864-1280, 1-800-228-3344

Holiday Inn-Airport  
\$95.95 - Specify "Corporate Rate"  
Weekends \$68  
750 Stelzer Road  
Columbus, OH 43219  
614-237-6360

Comfort Inn  
\$49 - Specify "Capital Student Visiting"  
(I-71 at Route 161)  
1213 E. Dublin-Granville Rd.  
Columbus, OH 43229  
614-885-4084

Red Roof Inn East  
\$65.99 (varies)  
I-70 and Brice Road  
Reynoldsburg, OH 43068  
614-864-3683, 1-800-843-7663

Cross Country Inn-Airport  
S. \$63.99, D. \$73.99  
4240 International Gateway  
Columbus, OH 43219  
614-237-3403

Extended Stay America-Dublin  
S. Nightly: \$49, Weekly \$259  
450 Metro Place North  
Dublin, OH 43017  
614-760-0053

Cross Country Inn  
\$55.99 - \$66.99  
2055 Brice Road  
Reynoldsburg, OH 43068  
614-864-3880, 1-800-621-1429

Holiday Inn East I-70  
\$65 - Specify "Capital Student Visiting"  
AAA Discount: \$79  
4560 Hilton Corporation Dr.  
Columbus, OH 43232  
614-868-1380

Fairfield Inn  
\$49 - \$65 (varies)  
887 Morse Road  
Columbus, OH 43229  
800-228-2800

Four Points by Sheraton  
\$69 Specify "Corporate Rate with CFT number"  
2124 S. Hamilton Road  
Columbus, OH 43227  
614-861-7220

Concourse Hotel-Airport  
S. \$113 D. \$120  
If you have business card:  
Specify "Corporate Rate"  
S. \$98 D. \$108  
Columbus, OH 43219  
614-237-2515

Hampton Inn  
Weekday: \$89 - 92, Weekend: \$75 - 79  
Specify "Corporate Rate"  
3920 Tuller Road  
Columbus, OH 43017  
614-889-0573

Hampton Inn East  
S. \$75 D. \$79  
1890 Winderly Lane  
Pickerington, OH  
614-864-8383

Radisson Hotel-Airport  
S. \$119 D. \$139  
AAA Discount \$89  
1375 N. Cassady Ave.  
Columbus, OH 43219  
614-475-7551

## SCHEDULE NOTES

**Saturday, April 6, 2002**

7:30 AM - Annual Metcalf & Eddy Hosted Environmental Science Breakfast (invitation only)

8:00 AM - Registration in Lobby of Huff Learning Center

9:00 AM - Morning Podium Sessions in Battelle Hall

- Morning Poster Sessions in Kern Chapel

11:15 AM - All-Academy Lecture in Arena of Capital Center (East side of campus on Pleasant Ridge.)

12:15 PM - Lunch in Campus Center (\$5; pay at the door)

1:15 PM - Annual Business Meeting (Academy Members only) in

1:30 PM - Pre-College Poster Session, Tolerton & Hood Science Hall

2:00 PM - Afternoon Sessions (Podium & Poster)